

Application No.: 10/776,228Docket No.: 2336-241**REMARKS**

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 2-21 are pending in the application. Claim 1 has been cancelled without prejudice or disclaimer. Claim 8 has been rewritten in independent form including all limitations of base claim 1 without otherwise touching the merits. Claims 2-5, 7 and 9-10 have been amended to depend from claim 8. New claims 11-21 have been added to provide Applicants with the scope of protection to which they are believed entitled. The Abstract has been revised to be compliant with commonly accepted US patent practice. No new matter has been introduced through the foregoing amendments.

The Examiner's 35 U.S.C. 112, *second paragraph* rejection of claim 8 as being indefinite is traversed, because claim 8 particularly points out and distinctly claims the subject matter which Applicants regard as the invention. In particular, the Examiner is questioning how step c) can be performed after completing step c), i.e., how step c) can be performed after its completion. This is, however, not the actual language of claim 8. Original claim 8 clearly recites the additional step c') (c prime) of performing a heat treatment process, after completing step c). Since step c) and c') are two different steps, one can certainly be performed after another. The scope of original claim 8 is therefore ascertainable to a person of ordinary skill in the art. Withdrawal of the 35 U.S.C. 112, *second paragraph* rejection of claim 8 in view of the above is believed appropriate and therefore courteously solicited.

The 35 U.S.C. 102(e) rejection of claims 1-4, 7, and 10 as being anticipated by *Orita* (U.S. Patent No. 6,673,702) is either moot or believed overcome in view of the above amendments. In particular, claim 1 has been cancelled while claims 2-4, 7 and 10 have been amended to depend

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from claim 8 which is not rejected as being anticipated by *Orita*.

The 35 U.S.C. 103(a) rejection of claims 5-6 and 8-9 as being obvious over *Orita* in view of *Nakamura* (U.S. Patent Application Publication No. 2003/0216011) is noted. Applicants respectfully traverse, at least, the rejection of claim 8.

The Examiner admitted that *Orita* does not additionally teach a heat-treating step. The Examiner then alleged that *Nakamura* teaches such a step at page 4, paragraphs [0060]-[0061]. The Examiner finally concluded that it would have been obvious to additionally perform the *Nakamura* heat-treating step in the method of *Orita* to increase the dopant activity in the substrate (GaN layer) as taught by *Nakamura*.

Applicants respectfully disagree, because the annealing process of *Nakamura* is distinctly different from the claimed heat-treatment process of claim 8. More specifically, the heat-treatment process of claim 8 is performed to improve the surface condition of the nitride semiconductor crystal film from which the oxide has been removed in the previous step c). See also page 14, lines 14-15 of the specification. However, the *Nakamura* annealing process is for another purpose, i.e., activating the p-type dopants. The reference fails to teach or suggest the heat-treatment process improving the surface condition of the nitride semiconductor crystal film after the oxide removal as recited in claim 8.

In addition, the *Nakamura* does not teach or suggest to perform the annealing process after the oxide removal step (step c) as claimed in claim 8. Thus, a person of ordinary skill in the art learning of the relevant teachings of *Orita* and *Nakamura* would not have been motivated to perform the *Nakamura* annealing process after the *Orita* oxide removal step in the presently claimed manner, lacking an adequate suggestion in the applied art.

Accordingly, Applicants respectfully submit that it would not have been obvious to combine the applied references to arrive at the claimed invention, more specifically, to include the

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step c') of performing a heat treatment process on the nitride semiconductor crystal film, after completing the step c), as presently recited in claim 8. Original claim 8 is thus patentable over the applied references. Claims 2-7 and 9-10 depend from claim 8, and are considered patentable at least for the reason advanced with respect to claim 8.

New independent claim 11 includes a limitation similar to the limitation of claim 8 and is therefore believed to be patentable over the reference for the same reason advanced above. New independent claim 11 further requires the steps be performed in the recited order. The applied references do not fairly teach or suggest the order in which the steps of claim 11 are performed. Claim 11 is therefore patentable on its own merit.

Claims 12-21 depend from claim 11, and are considered patentable at least for the reason advanced with respect to claim 11.

Claim 20 is further patentable on its own merit, because the applied references, especially *Nakamura*, teach away from the claimed temperature range of from 100 °C to lower than 400 °C. See *Nakamura* at paragraph [0060], line 10.

Claim 21 is further patentable on its own merit, because the applied references, especially *Nakamura*, teach away from the claimed hydrogen and/or ammonia atmosphere of the heat-treatment process. See *Nakamura* at paragraph [0060], the last three lines, and paragraph [0061], the last five lines.

Each of the Examiner's rejections has been traversed/overcome. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

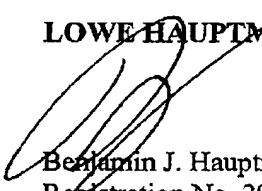
The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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